

Attorney Docket: MIO 0018 V2/96-1138.03

**CLAIMS**

- Sub 67
1. A semiconductor device precursor comprising:  
a substrate;  
a layer of dielectric material formed on at least a portion of said substrate;  
a layer of conductive material formed within said layer of dielectric material; and  
a layer of hard mask material formed on at least a portion of said layer of dielectric material; at least a portion of said layer of dielectric material and said layer of hard mask material each having openings therein defining a via, said via exposing at least a portion of said layer of conductive material; said layer of dielectric material including a pair of shoulders having hard mask material thereon, and said layer of hard mask material having a pair of facets.
  - 10 2. A semiconductor device precursor as claimed in claim 1 in which said layer of hard mask material includes a layer of etch resistant material thereon.
  3. A semiconductor device precursor as claimed in claim 1 wherein said hard mask material is selected from the group consisting of tungsten, tungsten silicide, polycrystalline silicon, titanium, titanium nitride, titanium silicide, and titanium-tungsten alloys.
  - 15 4. A semiconductor precursor device as claimed in claim 1, wherein said layer of conductive matter contacts at least a portion of said substrate.
  5. A semiconductor device precursor comprising:  
a substrate;  
a layer of dielectric material formed on at least a portion of said substrate;  
a layer of conductive material formed within said layer of dielectric material;  
20 a layer of hard mask material formed on at least a portion of said layer of dielectric material; at least a portion of said layer of dielectric material and said layer of hard mask material each having openings therein defining a via, said via exposing at least a portion of said layer of

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conductive material; said layer of dielectric material including a pair of shoulders having hard mask material thereon, and said layer of hard mask material having a pair of facets; and an interconnect material in said via.

6. A semiconductor device as claimed in claim 5, wherein said hard mask material is selected from the group consisting of tungsten, tungsten silicide, polycrystalline silicon, titanium, titanium nitride, titanium silicide, and titanium-tungsten alloys.
7. A semiconductor device as claimed in claim 5, wherein said hard mask material comprises a titanium-tungsten alloy.
8. A semiconductor precursor device as claimed in claim 5, wherein said layer of conductive matter contacts at least a portion of said substrate.